THE IMPACT OF M&A ON BANK'S FINANCIAL PERFORMANCE: EVIDENCE FROM EMERGING ECONOMY

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How to cite this paper: Muhammad, H., Waqas, M., & Migliori, S. (2019). The impact of M&A on bank's financial performance: Evidence from emerging economy. *Corporate Ownership & Control, 16(3),* 52-63.
http://doi.org/10.22495/cocv16i3art5

ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 12.03.2019
Accepted: 25.04.2019

JEL Classification: G21, G30, G34
DOI: 10.22495/cocv16i3art5

Abstract

The proliferation of bank M&A has been a global phenomenon. In many emerging economies, bank M&A has often been driven by policies for restructuring the banking industry in the hope of improving stability in the financial system. The Pakistan M&A market is relatively new and is characterized by several unique features. In this regards, our study aim is to examine the impact of pre and post M&A on the bank's financial performance in Pakistan during the period (2004-2015). Our results reveal that liquidity, profitability and investment ratios of the banks are positively and significantly increased the performance after M&A. Nevertheless, the solvency ratios indicate negative effects which are mainly based on the fact that after undergoing M&A the acquiring bank has to deal with the greater amount of debt burden as compared to pre-M&A. In light of these results, this study suggests implications for both theory and practice and also recommends ideas for future research.

Keywords: Mergers and Acquisitions, Financial Ratios, Banking Industry, Emerging Economy

1. INTRODUCTION

Merger and acquisition (M&A) are considered an effective and well-known approach adopted by organizations to compete in the current global and dynamic environment (Sherman, 2010). Literature highlights that M&A has been an important and critical strategy for firms to achieve growth and efficiency, by creating synergies, reducing costs, acquiring assets and expanding to new markets (Martynova & Rennenborg, 2006; Marques-Ibanez & Altunbas, 2004).

Although both terms merger and acquisition are usually used conversely, they refer to two different ways to expand the business of a firm. Specifically, the merger is the combination of two or more companies in the creation of a new entity or formation of a holding company. One of the most common arguments is that firms can avail "synergies" benefits after merging, such as expected cost savings, growth opportunities, and other financial benefits that occur as a result of the combination of two firms working together for the success of the business (Ravenscraft & Scherer, 1987). Instead, an acquisition is the purchase of shares or assets on another company to achieve a managerial influence (Martynova & Rennenborg, 2006; Chen & Findlay, 2003), not necessary by mutual agreement (Jagersma, 2005). Profitability, survival, and shareholders appear to be the most important considerations and motivations for an organization undergoing mergers or acquisitions as they are related to converging resources, technology and skills in an attempt to increase firm's performance and shareholders wealth (Soludo, 2004).

In the developed countries firms have been intensively using M&A as a strategic tool for improving performance and corporate restructuring during the last three decades. The relevance of this topic further increases referring to M&A realized in the financial sector because financial sector development plays a significant role for the economic growth of a country (Awan & Mahmood, 2015; Awan & Azhar, 2014). The analysis of the global financial sector highlights that is deeply involved in consolidation, restructuring procedures and exclusion of restrictions imposed on M&A. This phenomenon has been mostly observed in European banking industries, as more and more banks are consolidating into one another for the creation of a

more strong existence condition (Berger & De Young, 2001). The expansion for banks has started through the wave of M&A in Europe, in the US and next also has been spread worldwide (Focarelli & Panetta, 2003).

Existing studies highlight that there is a positive relationship between M&A of the banks and efficiency of the financial sector (De Nicolò et al., 2003). However, the relationship between M&A and the performance of the banks has remained ambiguous. Specifically, there is mixed evidence on the effect of M&A on the bank's financial performance: some studies report improvement in financial performance after M&A (Calomiris & Karenski, 2000; De Nicolo et al., 2003); on the contrary, other studies show a decrease in financial performance (Berger & Humphrey, 1992; Badreldin & Kalhoefer, 2009; Abbas et al., 2014). Then, the relationship between banks undergoing M&A and impact of the same on their subsequent performance is trending topic which requires more in-depth investigation (Stahl & Voigt, 2004).

Based on such argumentations, the purpose of this study is to explore whether there is a significant or insignificant impact on the performance of banks after the M&A. Specifically, we make a comparative analysis of banking sector performance before and after M&A aiming to answer the following research questions: *Do M&A's affect the financial performance of banks in Pakistan?*

We pursue our research objectives focusing our analysis on a sample of 15 sets of banks (30 banks) operating in Pakistan during the period 2004-2015. Pakistan is a very interesting context in which to test the effect of M&A on banks performance. Indeed, until the end of the 1980s, Pakistan's banking sector was regulated by the government which considered the financial industry as a tool to implement its development strategy. Since the early 1990s, Pakistan's financial system has been involved in a process of financial sector reforms, through the privatization of state-owned commercial banks and the introduction of new private banks in order to establish a market-based banking system based on an effective competition among banks and focused on efficiency and financial performance. In an attempt to meet the new regulatory requirement laid down by the State Bank of Pakistan (SBP), financial institutions commenced consolidating (Afza & Yusuf, 2012) and, an important driver of financial sector growing level of M&A was the implementation of Basel Accord II by SBP (Mahmood & Loan, 2006).

Our results reveal that liquidity, profitability, and investment ratios have been positively and significantly improved the financial performance of banks after experiencing M&A. However, the solvency ratios of banks indicate negative effects after M&A, which may be due to the burden of debt on the newly acquired banks as compared to pre-M&A.

This study can offer several contributions to the literature. First, our study extends the existing knowledge on M&A in the banking sector in a context not yet well investigated. In fact, most of the previous studies have focused on developed economies and very few are still studies on emerging economic contexts. Therefore, our study also contributes to a better understanding of the differences in the effects of M&A on the bank's performance between different economic contexts and to identify the respective determining factors. Second, previous studies on M&A in the banking sector in Pakistan have analyzed this phenomenon with a limited sample, time period and few financial ratios (Afza & Yusuf, 2012; Abbas et al., 2014). Instead, we expand our study by using 13 financial ratios to find the impact of M&A in 15 sets of banks (30 banks) during the period of 2004-2015. Third, our study contributes to a better knowledge of the effect of M&A in a financial institution, and in particular banks. Indeed, a better understanding of whether and how M&A of banks differ from M&A of other firms is crucial in order to evaluate correctly the strategic behaviour of banks in the current global financial scenario. Finally, our study may have important practical implications helping banking industry personnel and policymakers to better understand the important factors associated with the successful implementation of M&A in the Banking Industry of Pakistan.

The remainder of this paper is organized as follows. Section 2 briefly provides an overview of the banking industry of Pakistan. Section 3 highlights the literature review on the impact of M&A on the bank's performance. Section 4 outlines the methodological approach and illustrates the sample and data. Section 5 describes the empirical results and analysis. Finally, Section 6 presents the conclusion and managerial implications.

2. OVERVIEW OF BANKING INDUSTRY OF PAKISTAN

Banking sectors play an important role in economic development by mobilizing savings into investment activities (Mordi, 2002) and in the creation of wealth by facilitating capital formation, enhancing economic growth and development, reducing information costs and offering risk management services (Dogarawa, 2011). Banking system reforms may be initiated by the government in developing, as well as developed countries, to remedy any deficiencies undermining the banking system (Yusuf & Sheidu, 2015).

The banking history of Pakistan is witness to various interesting phases' i.e. pre-nationalization, nationalization and post nationalization. In the pre-nationalization phase, Australian Bank Ltd and Habib Bank Ltd were the only two banks after the Independence Day of Pakistan, August 14, 1947. For the newly established government, the Reserve Bank of India was performing as the central bank. A need was felt to establish the banking sector of Pakistan because the Reserve Bank of India was not performing its functions fairly and many Indian banks closed their offices in Pakistan which shrunk this industry. Therefore, the government of Pakistan founded the State Bank of Pakistan in 1948 and the National Bank of Pakistan in 1949. The Government then launched the State Bank of Pakistan act in 1956 and introduced Banking Companies Ordinance in 1962 for the development of the banking industry. The nationalization phase began in 1974. The government decided to nationalize the banking sector by merging all the banks and established five banks. Nonetheless, the post-nationalization began in 1990 when the government of Pakistan privatized the banks and denationalized two financial institutions by making amendments in the National Act of 1974. The government made relaxation in the policy of opening up of private banks which encouraged the private sector to grow. At present,

the State Bank of Pakistan is regulating 34 banks which comprise of 5 public sector banks, 17 domestic commercial private banks, 5 foreign banks, 5 Islamic banks and 2 specialized banks with 13,692 total number of branches all across the country (SBP, 2018).

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

3.1. M&A's and bank performance

The growing research identified to bank M&A over the last decade has given increase to empirical studies available on the subject (Pham et al., 2015). In order to measure the success of M&A deals among banks, two different prominent empirical methodologies are used i.e. event studies and performance studies (Marques-Ibanez & Altunbas, 2004; Beitel & Schiereck, 2001). The event study methodology directly measures the impact a merger or acquisition has on shareholder wealth (Kolaric & Schiereck, 2014; Delong & DeYoung, 2007; Knapp et al., 2005). Whereas, operating performance approach compares the pre and post-M&A performance of the banks (Akpan et al., 2018; Pazarskis et al., 2014; Bhabra & Huang, 2013; Correa, 2009; Cox, 2006).

Banks are consolidating since 1989 by anticipating in holding the global financial system and probable to face further re-structuring against the consequences of the recent crisis in financial markets. Such banks are expected to hold the global financial system (Fixler & Zieschang, 1993). There have been various studies conducted in many developed countries, examining the potential gains to be made from M&A (Shi et al., 2017; Gattoufi et al., 2014; Bogetoft & Wang, 2005). Nevertheless, the need to gain such benefit from M&A has drawn considerable attention of many researchers around the world (Hassen et al., 2018; La Rosa et al., 2018; Antoniadis et al., 2014; Duppati & Abidin, 2015; Pasiouras & Gaganis, 2007).

Eccles et al. (1999) argue that the main goals of M&A are to infiltrate in the market. They also consider the vertical expansion so that the firms can control their supply and distribution sources etc. Hubbard and Purcell (2001) posit that foreign investors have an opportunity to see themselves in the world new market by M&A. Fixler and Zieschang (1993) suggest that efficiency enhancement strategies can be effective not only with the cost controls but also with management proficiency and competence. These skills required for achieving effectiveness can be achieved through undergoing M&A. Correspondingly, Resti (1998) states that after going through M&A; the company experience increased in profitability and based on the increased size and enhanced pool of resources at their disposal such companies also secured greater level of effectiveness.

Empirical findings on M&A impact and bank performance reveal different results. For instance, Sufi (2004) extend a distinct dimension highlighting the fact that small organizations are more likely to bear fruitful results of M&A in comparison to the larger organizations, as they later may pose greater challenges for management. Besides, Weingberg (2007) reveals that mergers influence the performance of the merged company as the newly established company has greater market power in addition to the whole set of skills and competencies which can easily dominate many of the management challenges based on the intent and strive of decision makers. Additionally, Mantravadi and Reddy (2008) note that post-merger time of an organization is characterized by positive fluctuations in the market offering of the particular company, however, they also noted that the impact of this merger on the profitability of the company is very little.

Recently, Akpan et al. (2018) examine the M&A impact on operating performance of Nigerian banks during 1995-2012. They find a significant improvement in the investment banks after experiencing M&A. Likewise, Abdou et al. (2016) find a positive influence of M&A on the financial performance of Nigerian banks. Hassen et al. (2018) examine the impact of M&A on 60 banks in 17 European countries during the period 2005-2013. They posit that M&A has a positive effect, which means that in the long run, M&A achieve all their aims. Furthermore, Awan and Mahmmod examine the impact of M&A on the performance of 7 commercial banks in Pakistan during the period of 2002-2011. They use four measurement ratios (i.e. liquidity, profitability, solvency, and investment) and indicate a positive impact of M&A on banks performance.

On the contrary, some studies proved that near about half of M&A go negative to fulfil their goals (Badreldin & Kalhoefer, 2009). Afza and Yusuf (2012) investigate the cost and profit efficiency impact of mergers in the banking sector of Pakistan during 1998-2006. They document that there is an improvement in the cost efficiency of the bank after experiencing a merger; however, they did not find any significant evidence for profit efficiency. In a similar vein, Abbas et al. (2014) explore the financial performance of 10 banks in Pakistan after M&A during the period of 2006-2011. They also use four measurement ratios (i.e. profitability, efficiency, leverage, and liquidity) and reveal that there is no positive improvement in the bank's performance after M&A. While examining the impact of M&A on the bank's performance, Beccalli and Frantz (2009) posit that the operations of M&A are associated with a slight deterioration in profit efficiency and with a significant increase in cost efficiency. However, some studies concluded that the failure of M&A companies keep a lot of reasons behind them including, distinctiveness between their goal due to their size, their spread of risk into irrelevant it may have cultural obstacles in company policies, procedures and their style of operation (Sanni & Adereti, 2009). Besides, Giudici and Bonaventura (2018) explore the post-initial public offering (IPO) operating performance of 245 European firms that completed M&A transaction after going public. They find that acquiring IPO firms do not generally perform differently from their non-acquiring counterparts. Nevertheless, they exhibit a significant drop in operating performance that is common to most IPO firms. In addition, Shaban et al. (2019) examine the influence of M&A on two Jordanian banks performance and argue that after experiencing M&A banks performance decrease in first two years, but gradually start expansion in the subsequent years. They conclude that the fluctuation of results may be attributed to the difficulties in managing the increased volume of assets after the M&A. Nevertheless, some studies argue that M&A has no significant impact on bank

performance (Asimakopoulos & Athanasoglou, 2013; Marimuthu & Ibrahim, 2013; Castellet & Fernandez, 2005). Similarly, Liargovas and Repousis (2011) reveal that bank after M&A have no impact and do not create wealth. Thus, based on prior argumentations, our first hypothesis is as follow:

H1: There is a significant positive difference in the overall financial performance of banks in Pakistan between pre and post-M&A.

3.2. M&A's and liquidity ratios

Liquidity of a bank is defined as the ability of a bank to meet its short-term obligations swiftly and in a streamlined manner (Brayshaw et al., 1995). There are numerous determinants of liquidity identified as being abundantly used in the relevant literature. For instance, Horne and Wochowicz (2004) reveal that the current ratio is achieved by dividing current assets by current liabilities. Further, they suggest that it reflects the capacity of the bank to meet its short-term obligations like claims against the current and savings account, short-term borrowings from other banks, regulatory reserves with the central bank, payroll and other payable employee benefits. Pazarskis et al. (2006) posit that after M&A, firm liquidity increase because the firms are in a good position to meet the current obligations through current assets. Irfan Shakoor et al. (2014) used four measurement ratios to analyze the impact of M&A on firm performance. They revealed that liquidity has positive, while profitability, solvency, and investment ratios have a negative impact on firm performance after M&A. Moreover, Haider et al. (2015) conduct a study on a small set of six bidder banks and find that bidder banks did not improve the post-merger performance in term of profitability, liquidity, leverage, capital adequacy, and size.

Based on prior discussions, we measured the liquidity of the banks through three proxies' i.e. Advances to Deposit Ratio (ADR), Cash to Assets Ratio (CTA), and Current Ratio (CR). Thus, the research hypothesis for testing the liquidity ratio between pre and post-M&A is as follow:

H2: There is a significant positive difference in the liquidity ratio of banks in Pakistan between pre and post-M&A.

3.3. M&A's and investment ratios

Investment of a bank is defined as monetary and non-monetary inputs required for the streamlined running of operations in an attempt to generate maximum economic benefit (Feroz et al., 2003). There are various determinants of investment ratio identified in the prior literature. For instance, Pearce (2015) suggests that return on investment is considered as the most authentic one and it is calculated by subtracting the total cost from total revenue and dividing it with the total cost and multiplying the output with 100 to achieve a percentage. Sinha and Gupta (2011) indicate that M&A specifically affect particular financial parameters such as economies of scale and scope, EBIT, return on investment, profit and interest ratios.

Consequently, we operationalized the scope of investment to the level of return on investment and earnings per share. Thus, the research hypothesis for testing the investment ratios between the pre and post-M&A is as follow:

H3: There is a significant positive difference in the investment ratios of banks in Pakistan between pre and post-M&A.

3.4. M&A's and solvency ratios

Solvency of a bank can be referred to its ability to pay off the long-term obligations. Solvency is essential to staying in business as it asserts the company's ability to continue operations into the foreseeable future (Willett, 2005). Solvency is chiefly associated with the capacity of the bank to pay its long-term liabilities whether individual or combined including the obligation due to associated undertakings. In order to be solvent, a bank must maintain its assets in greater quantity in comparison to the sum of its liabilities (Mishkin, 1998). There are numerous determinants of liquidity identified as being abundantly used in the relevant literature. For instance, Gaist (2009) extend that debt to equity ratio is the best imperative indicator to determine insights regarding the percentage of debt financing against equity financing used to acquire and maintain assets of the bank.

In this study, we measured the solvency of banks through three proxies i.e. debt to equity ratio, interest coverage ratio, and debt service coverage ratio. Hence, the research hypothesis for testing the solvency ratios between pre and post-M&A is as follow:

H4: There is a significant positive difference in solvency ratios of banks in Pakistan between pre and post-M&A.

3.5. M&A's and profitability ratios

The profitability of a bank is characterized by its ability to engender earnings being compared against its expenditure and other related costs over a particular time period (Fridson & Alvarez, 2011). Profitability ratios measure the company use of its assets and control of its expenses to generate an acceptable rate of return (Muhammad et al., 2016; Williams et al., 2006). Further, Oral and Yolalan (1990) indicate that DuPont analysis is an effective proxy for measuring the profitability of a bank. DuPont analysis combines various profitability indicators and uses its collective benefits to make implications regarding the profitability of a bank. There are numerous determinants of liquidity identified as being abundantly used in the relevant literature. For instance, Akhavein et al. (1997) find that there is a significant positive impact of pre and post-M&A on the profitability of banks. Likewise, Sinha and Gupta (2011) indicate that there is a positive effect of pre and post-M&A on the performance of banks. Nonetheless, Kouser and Saba (2011) find a negative association between M&A and profitability of banks.

In this study, the scope of profitability has been operationalized to the level of DuPont's analysis, net profit margin, gross profit margin and total assets to turnover ratio. The research hypothesis for testing the profitability ratios between pre and post-M&A is as follow:

H5: There is a significant positive difference in profitability ratios of banks in Pakistan between pre and post-M&A.

4. RESEARCH METHOD

In an attempt to select best tools and techniques constituting the methodology mix, we have critically reviewed various techniques from previous studies which have been conducted in the similar context of evaluating the role of M&A on the financial performance of organizations. For instance, Ravinchandran et al. (2010) used the statistical techniques of paired sample t-test and ratio analysis to examine the impact of M&A on banks performance. Correspondingly, Kouser and Saba (2011) and Abbas et al. (2014) used only the ratio analysis comparison to evaluate the impact of M&A on financial performance. Nevertheless, Irfan Shakoor et al. (2014) used linear regression models to investigate the said impact. In the light of the aforementioned discussion, it can be safely concluded that ratio analysis comparison is most commonly used the technique to be applied in the context of this study, however, in an attempt to achieve greater rigor regression analysis has also been used. Thus, we used 13 financial ratios (as shown in Table 1) to examine the impact of M&A on banks financial performance.

The present study used a panel data set of the banking sector in Pakistan to empirically test the impact of pre and post-M&A on banks performance. We employed a purposive sampling technique for the purpose of drawing a sample from the population. Under the purposive sampling technique, our sample is comprised of 15 sets of banks (30 banks) as shown in (Appendix A). We extracted data from the Karachi Stock Exchange (KSE) website from 2004-2015.

Table 1. Financial ratios used in evaluating M&A performance

Ratios	*Formulas*	*Source*	*Ratios*	*Formulas*	*Source*
Advance to Deposit Ratio (ADR)	Advance/deposits	Haider et al. (2015)	Total Assets Turnover (TAT)	Net sales/average total assets	Cabanda & Pajara-Pascual (2007)
Cash to Asset Ratio (CTA)	Marketable securities/current liabilities	Gugler et al. (2003)	Return on Investment (ROI)	Net profit/total investment(100)	Haider et al. (2015)
Current Ratio (CR)	Current assets/current liabilities	Mantravadi & Reddy (2008)	Earnings Per Share (EPS)	Net income available to shareholders/number of shares outstanding	Abbas et al. (2014)
Return on Asset (ROA)	Net income/average total assets	Muhammad et al. (2016)	Debt to Equity (D/E)	Total Debt/ total equity	Abbas et al. (2014)
Return on Equity (ROE)	Net income/average stockholder equity	Heron & Lie (2002)	Interest Coverage (IC)	EBIT/interest expense	Cabanda & Pajara-Pascual (2007)
Net Profit Margin (NPM)	Profit after Tax/revenue	Heron & Lie (2002)	Debt Ratio (DR)	Total liabilities/total asset	Mantravadi & Reddy (2008)
Gross Profit Margin (GPM)	(Revenue - cost of goods sold)/revenue	Muhammad et al. (2014)			

5. EMPIRICAL RESULTS AND DISCUSSIONS

5.1. Summary statistics

In Table 2, the summary statistics indicate the comparison of all ratios before and after M&A. The mean values for all variables improved after experiencing M&A, which clearly indicates an increase in the performance of banks. However, the numerical values relating to the data of solvency experienced declining. Therefore, it can be partially concluded that solvency of a bank is negatively associated with M&A undertaken, but contrary to it liquidity, investment, and profitability of the bank is showing incremental trend after M&A time series.

Table 2. Summary statistics (pre and post M&A)

Summary statistics (before M&A)				
	Liquidity	*Solvency*	*Investment*	*Profitability*
Mean	0.881	4.372	4.168	4.347
Maximum	9.952	28.3	88.6625	9.09
Minimum	0.144	5.205	0.759521	0.4329
Skewness	0.911251	0.391	2.011554	1.734043
Kurtosis	2.960202	3.319	6.049257	6.444721
Summary statistics (after M&A)				
Mean	1.24	5.95	3.77	5.78
Maximum	28.2	46.431	89.375	12.17
Minimum	0.127	4.485	1.928	1.024
Skewness	3.932	1.112	2.796	0.353
Kurtosis	22.435	4.796	11.201	1.413

5.2. Correlation matrix

Yamane (1973) posits that a correlation is considered in displaying positive and strong association, when the value of correlation coefficient is equal to or greater than 0.4 and when the value of correlation coefficient for two variables is greater than 0 but less than 0.4, then it is the indication of moderately positive association between the two. Further, Hahs-Vaughn and Lomax (2013) indicate that the value of the correlation coefficient between 0 and -1 is the indication of a negative relationship between the two variables. However, the value of the correlation coefficient between 0 to -0.4 is considered to be exhibiting strong negative relationship and the value of the relationship

between -0.4 and -1 is considered to be a moderately negative association between the two variables.

Table 3 reveals that the correlation among all variables is positive and links clearly with each other. However, the liquidity has negatively linked with solvency, while all other variables have a positive relationship with each other.

Table 3. Correlation matrix (pre and post M&A)

Correlation matrix (before M&A)				
	Liquidity	Solvency	Investment	Profitability
Liquidity	1			
Solvency	-0.026	1		
Investment	0.009	0.019	1	
Profitability	0.475	0.395	0.513	1
Correlation matrix (after M&A)				
Liquidity	1			
Solvency	0.084	1		
Investment	0.003	0.024	1	
Profitability	0.638	0.595	0.875	1

5.3. Ratio analysis comparison of banks (pre & post M&A)

The information included in Table 4 has been extracted after conducting financial statement analysis on two distinct time series. One time series constituted pre-M&A data having five-year observations for each bank, whereas the other time series constituted post-M&A data having five-year observations for each bank. In totality, there are 150 observations including 75 observations for pre-M&A time series; whereas the remaining 75 observations were for the post-M&A time series.

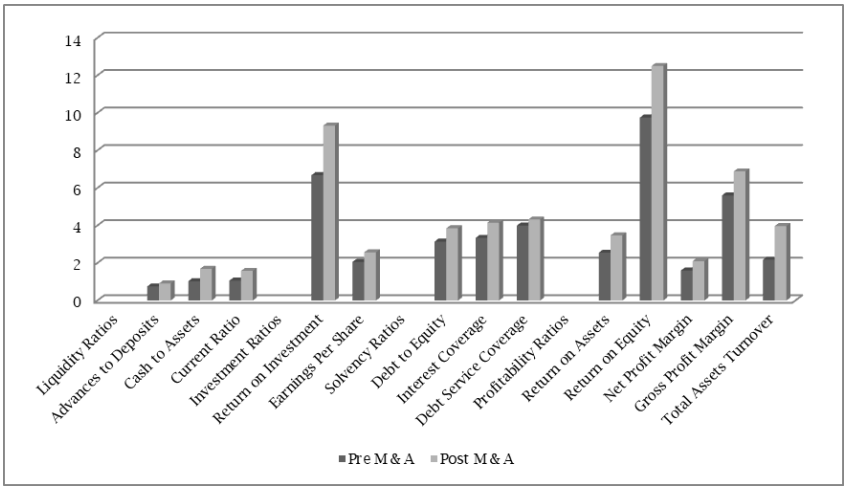
As evident in Table 4, the liquidity ratios for the post-M&A scenario are improving; specifically, advance to deposits ratio indicates the difference between banks total loans and total deposits. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unforeseen fund requirements. Nevertheless, if the ratio is too low, the bank may not be earning as much as it could be. The ideal advance to deposit ratio is 80% to 90% (Feroz et al., 2003). Similarly, the ideal value for cash asset and the current ratio is between to 1.5 and 2.00. If these ratios are too high (more than 2), then the bank may not be using its current assets or its short term financing efficiently (Fridson & Alvarez, 2011). Thus, it can be safely concluded that undertaking M&A has improved the liquidity position of the banks.

In addition, the comparative analysis of investment ratios is converged at the implication that M&A has also improved the investment returns of the banks. This indicates that the investment ratios in the time series comprising post-M&A data are better than the ratios calculated against the pre-M&A time series. Besides, the profitability ratios of the post-M&A indicate that the ratios have improved when compared against pre-M&A time series. Conversely, it is pertinent to mention here that with the happening of M&A in the banks; the solvency position of the same has also improved which is a risk indicator for banks because the greater the solvency ratio the more solvent the banks are (Fridson & Alvarez, 2011). However, this may be due to the greater amount of debt burden as compared to the pre-M&A position (Kumar, 2009). In totality, we can safely conclude that undertaking M&A on account of the banks operating in Pakistan is positively associated with enhanced performance (as shown in Figure 1). Therefore, our hypotheses *H1*, *H2*, *H3*, and *H5* have been accepted; whereas *H4* is rejected.

Table 4. Ratio analysis of banks (pre and post M&A)

Mean of averages from all banks for each ratio		
Liquidity Ratios	**pre M & A**	**post M & A**
Advances to Deposits	0.75	0.91
Cash to Assets	1.03	1.69
Current Ratio	1.06	1.58
Investment Ratios		
Return on Investment	6.68	9.32
Earnings Per Share	2.06	2.57
Solvency Ratios		
Debt to Equity	3.14	3.85
Interest Coverage	3.34	4.15
Debt Service Coverage	3.99	4.32
Profitability Ratios		
Return on Assets	2.55	3.47
Return on Equity	9.75	12.50
Net Profit Margin	1.60	2.10
Gross Profit Margin	5.60	6.88
Total Assets Turnover	2.18	3.97

Figure 1. Ratio analysis comparison (pre & post-M&A)



5.4. OLS regression results

Using the correlation analysis it was established that a positive association exists between the dependent and explanatory variables; however, in order to measure the causation effect with precision, this study employed regression analysis. According to Gujrati (2003), OLS regression is a measure that is used to determine the strength of the relationship between one dependent variable and a set of changing explanatory variables. The regression was developed using the standard regression equation and is provided as follows:

$$\text{Profitability (ROA)} = \beta_0 + \beta_1(ATD) + \beta_2(CTA) + \beta_3(CR) + \beta_4(ROI) + \beta_5(EPS) + \beta_6(DTE) + \beta_7(ICR) + \beta_8(DSCR) + e \quad (1)$$

Table 5 reveals that the obtained results clearly indicate a significant association between dependent and explanatory variables. The F-value (4.041) against p-value (0.000) clearly demonstrates that H0 is rejected and there is a considerable difference between the variations explained by intercept slope and intercept model. Moreover, the value of R2 explains that approximately 13% of the variations in the dependent variable are being caused by the explanatory variables, which indicates that the model is good fitted. Further, the beta values of advance to total deposit (0.0372) and cash to assets (0.0233) show that one unit change in these predictor variables brings 3.7% and 2.3% change in the outcome variable respectively. However, these coefficients are insignificant as the p-value against its corresponding t-statistic is 0.4529 and 0.1736 respectively. Similarly, the beta values of the current ratio (0.0194), debt to equity (0.0428) and interest coverage (0.0306) indicate that one unit change in these predictors brings 1.9%, 4.8% and 3.1% change in outcome variables respectively. On the other hand, the beta values of return on investment (0.0722) and earning per share (0.0867) explain that one unit change in these predictors brings 7.2% and 8.7% changes in the outcome variable respectively. The coefficient of these predictors is significant as the p-value against its corresponding t-statistic is (0.0271) and (0.0378) respectively.

In addition, it has also observed in Table 5 that the regression model does not contain the problems of heteroskedasticity, autocorrelation, and multicollinearity. Heteroskedasticity was measured by the application of Breusch and Pagan Test, the p-value of (0.043) demonstrates that there is no heteroskedasticity exists within the regression model. Similarly, autocorrelation was measured with the help of Durbin Watson test and its value (1.975) being approximately (2.0) is the clear indication that no autocorrelation exists. Moreover, the variance inflation factor (VIF) was used to measure the effect of multicollinearity in the regression model and the value of VIF (1.0) suggests that no such problem exists.

Table 5. OLS regression analysis (before M&A)

Outcome variable: Profitability (ROA)				
Parameter	***Coefficient***	***SE***	***t-statistic***	***p-value***
(Constant)				0.4656
Advances to Deposits	0.0372	0.049	0.7565	0.4529
Cash to Assets	0.0233	0.017	1.3807	0.1736
Current Ratio	0.0194	0.018	1.1111	0.2719
Return on Investment	0.0722	0.032	2.2783	0.0271
Earnings Per Share	0.0867	0.041	2.1346	0.0378
Debt to Equity	0.0428	0.057	0.7545	0.4542
Interest Coverage	0.0306	0.023	1.3580	0.1807
Debt Service Coverage	0.0489	0.044	1.1187	0.2687
F-statistic	4.041			0.0009
R-squared	0.1328			0.0090
Breusch and Pagan Test	17.285			0.0430
Durbin Watson	1.975			
Variance Inflation Factor	1.000			

Table 6 indicates the results of the banks after the M&A. The F-value (211.366) against p-value 0.000 clearly demonstrates that H0 is rejected and there is a considerable difference between the variations explained by intercept slope and intercept model. Moreover, the value of R^2 explains that approximately 54% of the variations in the dependent variable are being caused by the explanatory variables, which indicates that the model is good fitted. Further, the beta values of advance to total deposit (0.036), cash to assets (0.023) and interest coverage (0.038) show that one unit change in these predictor variables brings 3.6%, 2.3% and 3.8% changes in the outcome variable respectively. However, these coefficients are insignificant as the p-value against its corresponding t-statistic is 0.3189, 0.5209 and 0.087 respectively. On the other hand, the beta values of current ratio (0.074), return on investment (0.0246), earning per share (0.0075) and debt to equity (0.214) explain that one unit change in these predictors bring 7.4%, 2.5%, 0.7% and 2.1% changes in the outcome variable respectively. The coefficient of these predictors is significant as the p-value against its corresponding t-statistic is (0.000), (0.000), (0.000) and (0.000) respectively.

In addition, Table 6 also indicates that the Breusch and Pagan Test (13.424) against p-value (0.037) and Durbin Watson Test (2.08) reveal that there is no problem of heteroskedasticity and autocorrelation. Similarly, the value of VIF (4.401) suggests that there is no issue of multicollinearity within the regression model.

Table 6. OLS regression analysis (after M&A)

Outcome variable: Profitability (ROA)				
Parameter	***Coefficient***	***SE***	***t-statistic***	***p-value***
(Constant)				0.0043
Advances to Deposits	0.036	0.036	1.007	0.3189
Cash to Assets	0.023	0.0348	0.647	0.5209
Current Ratio	0.074	0.0357	2.068	0.0000
Return on Investment	0.246	0.0278	8.821	0.0000
Earnings Per Share	0.075	0.0279	2.697	0.0096
Debt to Equity	0.214	0.0218	9.786	0.0000
Interest Coverage	0.038	0.0219	1.747	0.0870
Debt Service Coverage	0.244	0.0218	11.184	0.0000
F-statistic	211.366			0.0000
R-squared	0.541			0.0291
Breusch and Pagan Test	13.424			0.0370
Durbin Watson	2.08			
Variance Inflation Factor	4.401			

5.5. Paired sample t-test

Paired sample t-test was used to establish the statistically significant differences between the two-time series; one comprising data including pre-M&A statistics whereas the other comprising the data including the post-M&A statistics. Table 7 indicates that the negative mean difference is the indication of the difference in means of variables between the two-time series. The p-values against t-statistic indicate that all the variables are statistically significant and have a positive incremental impact on the performance of banks in Pakistan; is evidenced as a result of M&A. However, it is pertinent to mention here that solvency of the bank after experiencing M&A has not improved with respect to our sample data.

Table 7. Paired sample t-test

Variable name	***Mean difference***	***t-statistic***	***P-Value***
Liquidity	-0.36	11.484	0.000
Solvency	+0.39	16.746	0.000
Investment	-1.58	21.677	0.000
Profitability	-1.44	19.908	0.000

6. CONCLUSION

The proliferation of bank M&A has been a global phenomenon. In many emerging economies, bank M&A has often been driven by policies for restructuring the banking industry in the hope of improving stability in the financial system. This is despite the limited evidence that M&A can lead to better performing banks. In this regards, the purpose of this study is to make a comparative analysis of the impact of pre and post M&A on the financial performance of banks in Pakistan during the period 2004-2015. The results reveal that liquidity, profitability, and investment of the banks are positively and significantly impacted by the experience of M&A and after facing such experiences the impact of aforesaid factors on profitability increased considerably.

Nonetheless, our results on the impact of M&A on financial performance in the banks confirm a norm of M&A literature in the developed countries. Where some studies report improvement in the financial performance after M&A (Caprion, 1999; Calomiris & Karenski, 2000; Heron & Lie, 2002; De Nicolo et. al. 2003; Gugler et al. 2003; and Feroz et al. 2005). On the contrary, some studies indicate decreases in financial performance such as (Berger & Humphrey, 1992; Fee & Thomas, 2004; Straub, 2007; Mantravadi & Reddy, 2008).

In addition, this study investigates that investment among all other indicators is the most affected factor after M&A, which means that a bank becomes able to achieve a relatively larger pool of funds at its disposal after being merged with or acquired. Conversely, it also reveals that solvency ratios are not statistically significant and different

between pre and post-M&A scenarios which are mainly based on the fact that after undergoing M&A the acquiring company has to deal with the greater amount of debt burden as compared to the pre-M&A position (Kumar, 2009).

The Pakistan M&A market is relatively new and is characterized by several unique features. Though, it is challenging to clearly state whether M&A in the banking sector of Pakistan lead to improved financial efficiency. This is because M&A in the banking sector of Pakistan is a continuous scheme and the sector is still undergoing reforms as a result of the global economic meltdown which affected the economy. Likewise, most of the conclusion reported by previous researchers (Afza & Yusuf, 2012; Abbas et al., 2014) reveal the negative impact of bank performance as a result of M&A with fewer numbers of banks as population samples for their studies.

6.1. Managerial implications and recommendations

This study reveals that after experiencing M&A banking players in Pakistan is characterized by enhanced business profitability, efficiency, and effectiveness. This is greatly based on the notion which has been tested and proved in this study that with the consolidation of physical and intellectual resources a subsequent organization possesses greater strength to cope up with the challenges faced within the prevailing business contemporary environment.

It is therefore recommended to the financial industry key players that effective strategy should be adopted to deal with the scarcity of resources and market competitiveness; it is imperative to consider M&A based consolidation of resources and competencies. The said transformation of resources, skills and competencies will enable an organization to start reaping fruits as soon as the consolidation happens against when new talent acquisition is being done the organization has to deploy dedicated resources and allocate learning initiatives to the newly acquired talent with the intention of getting them on board in an attempt to achieve the organizational objectives in a superior manner.

Besides, the post-M&A scenario enables an organization to secure for itself a better and competitive position within the industry and a greater level of competence associated with consolidation enable such organizations to materialize customer expectation in a more effective manner, thus achieving the level of both economies of scales and scopes.

6.2. Future research

This study has been conducted within the context of the Banking Industry of Pakistan, therefore; generalizability of the results is only limited to the said industry. Keeping in view the aforesaid, it is recommended for the future research that a greater pool of sample banks including countries having similar macroeconomic conditions must be selected so that greater generalizability of the results could be achieved.

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APPENDIX A

Table A1. Sample of the study

S/No.	*Type of Deal*	*Date*	*Acquirer/Bidder Bank*	*Acquired/Merged*
1.	Merger	01/01/2008	NIB Bank Limited	PICIC Commercial Bank Limited
2.	Acquisition	25/06/2008	Standard Chartered Bank Limited	American Express Bank in Pakistan
3.	Acquisition	18/09/2008	Habib Bank Limited	Saif Power Leasing Limited
4.	Acquisition	28/10/2008	Dubai Islamic Group LLC	Bank Islami Pakistan Limited
5.	Merger	07/11/2008	Atlas Bank Limited	KASB Capital Limited
6.	Merger	05/02/2008	KASB Bank Limited	Network Leasing Company Limited
7.	Merger	30/01/2009	HSBC Bank Middle East Limited	Amalgamation of Hong Kong and Shangai Bank branches in Pakistan
8.	Acquisition	27/03/2009	Bank Al-Habib Limited	Habib Financial Company Limited
9.	Acquisition	21/09/2009	MCB Bank Limited	Royal Bank of Scotland
10.	Merger	22/12/2009	Askari Bank Limited	Askari Leasing Company Limited
11.	Acquisition	26/07/2006	Atlas Investment Bank	Atlas Bank Limited
12.	Acquisition	06/07/2011	MyBank Limited	Summit Bank Limited
13.	Acquisition	03/01/2011	Royal Bank of Scotland	Faysal Bank Limited
14.	Merger	11/10/2010	Al-Zamin Leasing Corporation Ltd.	Capital Investment Bank Limited
15.	Merger	30/04/2004	Trust Investment Bank Limited	Trust Commercial Bank Limited